Department of Environmental Conservation

Division of Environmental Remediation

Record of Decision

Shenango Steel Mold Site
City of Buffalo, Erie County
Site Number 9-15-172

March 2002

New York State Department of Environmental Conservation
GEORGE E. PATAKI, *Governor* ERIN M. CROTTY, *Commissioner*

DECLARATION STATEMENT - RECORD OF DECISION

Shenango Steel Mold
Inactive Hazardous Waste Site
City of Buffalo, Erie County, New York
Site No. 9-15-172

Statement of Purpose and Basis

The Record of Decision (ROD) presents the selected remedy for the Shenango Steel Mold Class 2 inactive hazardous waste disposal site which was chosen in accordance with the New York State Environmental Conservation Law. The remedial program selected is not inconsistent with the National Oil and Hazardous Substances Pollution Contingency Plan of March 8, 1990 (40CFR300).

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the Shenango Steel Mold inactive hazardous waste site and upon public input to the Proposed Remedial Action Plan (PRAP) presented by the NYSDEC. A listing of the documents included as a part of the Administrative Record is included in Appendix B of the ROD.

Assessment of the Site

Actual or threatened release of hazardous waste constituents from this site, if not addressed by implementing the response action selected in this ROD, presents a current or potential significant threat to public health and the environment.

Description of Selected Remedy

Based on the results of the Remedial Investigation/Feasibility Study (RI/FS) for the Shenango Steel Mold Site and the criteria identified for evaluation of alternatives, the NYSDEC has selected full excavation of soil contaminated with polychlorinated biphenyls (PCBs) in excess of the Remedial Action Objectives (RAOs) for the site. The components of the remedy are as follows:

1. A remedial design program to verify the conclusions of the conceptual design, and provide the details necessary for construction, operation and maintenance, and monitoring of the remedial program.

2. Removal of concrete and debris in the area surrounding the "Tight Grid Area" (TGA). Removal of the concrete foundation that is located on the southern border of the TGA.

3. Excavation and off-site disposal of all soil that contains PCBs in excess of the RAOs (1 ppm for the surface soil and 10 ppm for subsurface soil). All soil would be transported to an off-site disposal facility. Based upon the existing data for the site, it is expected that all soil (surface and subsurface) contaminated with PCBs above one ppm will be removed.

4. All excavated areas will be backfilled, compacted, and seeded to re-establish vegetation.

New York State Department of Health Acceptance

The New York State Department of Health concurs with the remedy selected for this site as being protective of human health.

Declaration

The selected remedy is protective of human health and the environment, complies with State and Federal requirements that are legally applicable or relevant and appropriate to the remedial action to the extent practicable, and is cost effective. This remedy utilizes permanent solutions and alternative treatment or resource recovery technologies, to the maximum extent practicable, and satisfies the preference for remedies that reduce toxicity, mobility, or volume as a principal element.

3/28/2002
Date

Michael J. O'Toole, Jr., Director
Division of Environmental Remediation

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RECORD OF DECISION

Shenango Steel Mold Site
City of Buffalo, Erie County, New York
Site No. 9-15-172
March 2002

SECTION 1: SUMMARY OF THE RECORD OF DECISION

The New York State Department of Environmental Conservation (NYSDEC) in consultation with the New York State Department of Health has selected this remedy to address the significant threat to human health and/or the environment created by the presence of hazardous waste at the Shenango Steel Mold Class 2, inactive hazardous waste disposal site. As more fully described in Sections 3 and 4 of this document, illegal dumping (including the scrapping of power transformers) and the disposal of transformer oil have resulted in the disposal of a hazardous waste, including polychlorinated biphenyls (PCBs) at the former scrapping area, also called the "Tight Grid Area" (TGA). These disposal activities have resulted in the following significant threats to the public health and/or the environment:

- a significant threat to public health associated with exposure to PCB contaminated soil and the unrestricted access to the site by the public
- a significant environmental threat associated with the impacts of contaminants to soil.

In order to restore the Shenango Steel Mold inactive hazardous waste disposal site to pre-disposal conditions to the extent feasible and authorized by law, but at a minimum to eliminate or mitigate the significant threats to the public health and/or the environment that the hazardous waste disposed at the site has caused, the following remedy was selected:

- A remedial design program to verify the conclusions of the conceptual design, and provide the details necessary for construction, operation and maintenance, and monitoring of the remedial program.
- Removal of concrete and debris in the area surrounding the TGA. Removal of the concrete foundation that is located on the southern border of the TGA.
- Excavation and off-site disposal of all soil that contains PCBs in excess of the Remedial Action Objectives (RAOs) for the site (1 ppm for the surface soil and 10 ppm for subsurface soil). All soil would be transported to an off-site disposal facility. Based upon the existing data for the site, it is expected that all soil (surface and subsurface) contaminated with PCBs above one ppm will be removed.
- All excavated areas will be backfilled, compacted, and seeded to re-establish vegetation.

The selected remedy, discussed in detail in Section 8 of this document, is intended to attain the remediation goals selected for this site, in Section 6 of this Record of Decision (ROD), in conformity with applicable standards, criteria, and guidance (SCGs).

SECTION 2: SITE LOCATION AND DESCRIPTION

The site consists of approximately 18 acres of land, located at 1750 Fuhrmann Boulevard in Buffalo, New York (Erie County), see Figures 1 and 2. The site is reportedly owned by Sherland, Inc. and was formerly the location of a cast iron molding facility from 1962 to 1982. The property is currently unoccupied and only one of the mill buildings remains while the other two buildings have been demolished to their foundations.

The surrounding area is heavy industrial, commercial, and residential. The site is bordered on the south by the former Hanna Furnace site and the Union Ship Canal. The Tifft Nature Preserve and railroad tracks are located north of the site. New York State Route 5 and the Skyway Bridge (formerly Father Baker Bridge) border the site on the west. Numerous light industrial facilities are located south of the site.

The site is adjacent to the Union Ship Canal and is located approximately 0.5 miles east from the shore of Lake Erie. Most of the site and the adjacent Hanna Furnace property are located within the 100-year flood plain (Zone A) as defined by the Federal Emergency Management Agency. The municipalities of Lackawanna and Buffalo receive drinking water from a municipal supply with intakes in Lake Erie more than three miles from the Union Ship Canal.

SECTION 3: SITE HISTORY

3.1: Operational/Disposal History

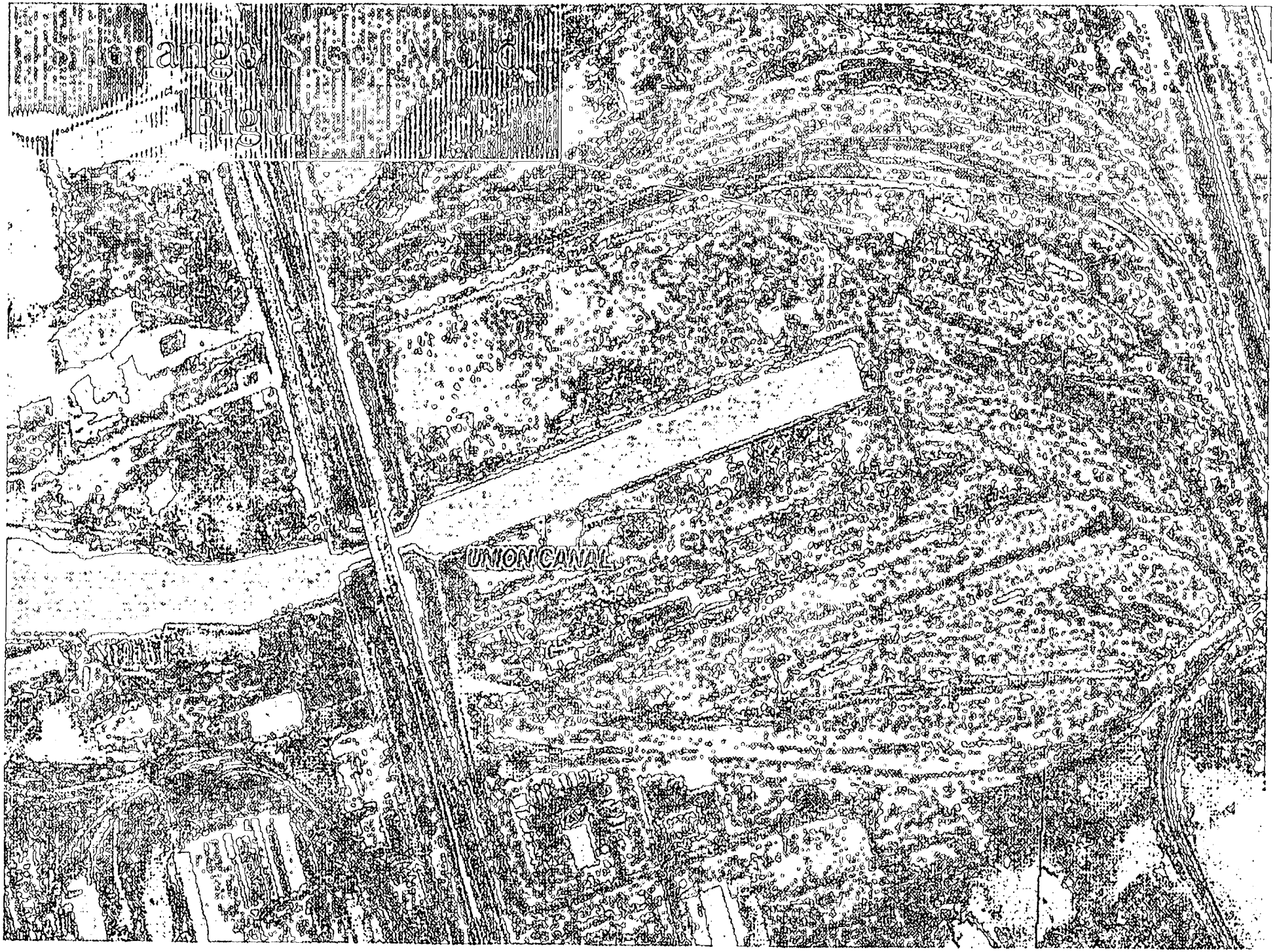
The site was used for the manufacture of cast iron ingots from 1962 to 1982. No records have been identified detailing the waste materials generated at the site other than that the facility processed pig iron produced at the adjacent Hanna Furnace property.

The NYSDEC Division of Spill Prevention and Response conducted a site visit and sampling program in October 1993 to delineate the location and extent of potential contamination after receiving an anonymous report of trespassers scrapping transformers and disposing of the transformer oil at the abandoned site. Sampling of soil at the transformer scrapping area was conducted and PCBs were detected in excess of 50 parts per million (ppm), the limit that defines hazardous waste.

3.2: Remedial History

Based on the results of the PCB sampling in 1993 and the identification of several waste containers at the site, the NYSDEC initiated an Interim Remedial Measure (IRM) in April 1994 to mitigate potential threats to public health and the environment from these materials. This included the excavation and off-site disposal of visually contaminated concrete debris and a small amount of underlying soil. Additionally, waste drums and pails were collected and disposed off-site.

Additional sampling was performed at the site as part of a Preliminary Site Assessment conducted in 1995. Detection of Aroclor-1260 in soil at concentrations greater than 50 ppm confirmed that a listed hazardous waste (Hazardous Waste No. B007) remained at the site. Groundwater sampling was also


UNION CANAL

CONRAIL

PAVED ROADWAY/DRIVEWAY

CONRAIL

TIGHT GRID AREA (TGA)– APPROXIMATE EXTENT OF FORMER TRANSFORMER DISPOSAL AREA

MH-3

MH-

CONRAIL

NOW OR FORMERLY LANDS OF
SHERLAND CORPORATION
LIBER 10022, PAGE 218
792,095.88 S.F.
18.18± ACRES

MH-2

36" CMP

FUHRMAN (80' WIDE) BLVD.

UNION SHIP CANAL

NOW OR FORMERLY LANDS OF
HANNA FURNACE CORPORATION
LIBER 6112, PAGE 462

Legend:

- Property Line
- 583 Contour Elevation
- Existing Structure/Building
- Dirt Road
- Concrete Slab/Debris
- MH-1 Manhole

ins are referenced to the NAVD 88 vertical datum

NO.	DATE	APPR.	REVISION

NO.	DATE	APPR.	REVISION

SHENANGO STEEL MOLD RI/FS
WORK ASSIGNMENT NO. D003970-03
BUFFALO, NEW YORK

Environmental Resources Management
ERM

CHECKED
DESIGN ENGINEER
PROJECT MANAGER
PROJECT MANAGER
APPROVED
APPROVED

DATE

FIGURE 2
SITE MAP

DRAWN: MKR	DATE: 1/30/02	REVISION DATE:	DRAWING NO.
SCALE: GRAPHIC	JOB NO.: 72703	FILE NAME: 72703015A	REV. NO.
			SHEET OF

performed and the results indicated that Class GA groundwater quality standards were exceeded for other contaminants such as xylene, iron, and manganese.

The presence of such contamination combined with unrestricted access to the site indicated that the site posed a threat to the public health and the environment. The site was subsequently listed on the New York State Registry of Inactive Hazardous Waste Disposal Sites (Registry) in October 1998.

The current owner of the site declined to undertake the remediation of the site. Therefore, a Remedial Investigation/Feasibility Study (RI/FS) was initiated by the NYSDEC in September 2000 under the NYS Superfund program.

SECTION 4: SITE CONTAMINATION

To evaluate the contamination present at the site and to develop alternatives to address the significant threat to human health and the environment posed by the presence of hazardous waste, the NYSDEC has recently conducted a Remedial Investigation/Feasibility Study (RI/FS).

4.1: Summary of the Remedial Investigation

The purpose of the RI was to define the nature and extent of any contamination resulting from previous activities at the site.

The RI was conducted from September 2000 to August 2001. A report entitled *Remedial Investigation, Shenango Steel Mold Site* dated January 2002 has been prepared which describes the field activities and findings of the RI in detail. The RI included the following activities:

- *Geophysical survey to locate subsurface structures and anomalies.*
- *Installation of Geoprobe® soil borings to obtain samples of soils and groundwater for analysis.*
- *Installation of monitoring wells to obtain samples of groundwater for analysis and for gathering information about groundwater depth and flow.*
- *Collection of surface water and sediment samples from the Union Ship Canal for analysis. Water level measurements of the canal were also obtained.*
- *Excavation of test pits to determine the nature and extent of light non-aqueous phase liquid (LNAPL) contamination. Samples of LNAPL were also collected and submitted for analysis.*

To determine which media (soil, groundwater, etc.) are contaminated at levels of concern, the RI analytical data was compared to environmental standards, criteria, and guidance values (SCGs). Groundwater, drinking water and surface water SCGs identified for the Shenango Steel Mold site are based on NYSDEC Ambient Water Quality Standards and Guidance Values and Part 5 of New York State Sanitary Code. For soils, NYSDEC Technical and Administrative Guidance Memorandum (TAGM) 4046 provides soil cleanup guidelines for the protection of groundwater, background conditions, and health-based exposure scenarios. In addition, for soils, site-specific background concentration levels can be considered for certain classes of contaminants. Guidance values for

evaluating contamination in sediments are provided by the NYSDEC "Technical Guidance for Screening Contaminated Sediments."

Based on the RI results, in comparison to the SCGs and potential public health and environmental exposure routes, certain media and areas of the site require remediation. These are summarized below. More complete information can be found in the RI Report.

Chemical concentrations are reported in parts per billion (ppb) for surface water and groundwater and in parts per million (ppm) for soil and sediment. For comparison purposes, where applicable, SCGs are provided for each medium.

4.1.1: Site Geology and Hydrogeology

The soil deposits encountered at the site generally consist of fill materials, fine to coarse sand, and brown silty clay. The fill material encountered at the site range in thickness from approximately 0.5 feet to 15 feet below grade surface (bgs) and are comprised of fly ash, cinders, demolition debris, bricks, ash, and slag.

Underlying the fill are black-brown organic clayey silt and lacustrine gray-brown clay/silt clays. Beneath the clay/silt layer is a discontinuous layer of sand and gravel and ultimately bedrock is encountered at 22 to 48 feet bgs. Bedrock at the site is Middle Devonian, the Levanna Shale member of the Skaneateles Formation.

Groundwater occurs in the fill, natural overburden, and in the bedrock at the site. Permanent groundwater is typically encountered at five feet bgs with a perched zone occasionally encountered at two to three feet bgs.

Surface water from the site either pools on the ground surface and infiltrates into the soil, is discharged to a storm sewer system, or discharges to ditches and wetland areas bordering the adjacent railroad yard.

4.1.2: Nature of Contamination

As described in the RI report, many soil, groundwater and sediment samples were collected at the site to characterize the nature and extent of contamination. The main categories of contaminants in soils which exceeded their SCGs are one volatile organic compound (VOC), semivolatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), and metals. The canal sediments also contain PCBs, SVOCs, and metals. Groundwater along the southern boundary of the site has been found to contain a petroleum product (hydraulic oil).

The one VOC found above guidance levels in soil is 1,1-dichloroethane. The SVOCs of concern for soil are polycyclic aromatic hydrocarbons (PAHs) including benzo(a)anthracene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and dibenzo(a,h)anthracene. The PCBs of concern for soil are Aroclors 1248 and 1260. The metals of concern for soil are arsenic, beryllium, cadmium, chromium, copper, iron, mercury, nickel, selenium, and zinc.

The PCB of concern for the canal sediment is Aroclor 1260. The SVOCs of concern for the canal sediment are phenol and benzo(a)anthracene. The metals of concern for the canal sediment are copper, iron, lead, manganese, mercury, silver, and zinc.

4.1.3: Extent of Contamination

The site was investigated using a 50-foot grid in the former transformer scrapping area, referred to as the Tight Grid Area (TGA), and was then expanded to a 200 foot grid for the remainder of the 18-acre site.

Table 1 summarizes the nature of contamination for the contaminants of concern in surface and subsurface soil and compares the data with the SCGs for the site. The following are the media which were investigated and a summary of the findings of the investigation.

Soil

A total of 138 soil samples were collected at the 68 boring locations at the site. Twenty-three borings were located within the TGA. One surface sample and one subsurface sample was collected at each of the boring locations.

Seven compounds were detected in the 24 soil samples collected for VOC analysis. However, only one compound, 1,1-dichloroethane, was found in two samples (0.22 and 0.31 ppm) which exceeded the soil objective listed in TAGM 4046 (0.2 ppm). This is not considered significant.

Three PCB Aroclors (1248, 1254, and 1260) were detected in the 63 soil samples collected within the TGA. Eight samples were identified at concentrations exceeding the soil objectives. Seven locations exceeded the surface soil objective for total PCBs (1 ppm). Total PCBs were found at concentrations ranging from non-detectable (i.e., below 0.1 ppm) to 138 ppm within the surface soil of the TGA. Total PCBs were also found at depth at concentrations up to 28 ppm (4.5 to 5.5 feet bgs) within the TGA.

Four PCB Aroclors (1242, 1248, 1254, and 1260) were detected in the 75 soil samples collected outside of the TGA. Three samples were identified at concentrations exceeding the surface soil objective for total PCBs. Total PCBs were found in the range of non-detectable (below 0.1 ppm) to 2 ppm.

The data suggests that the bulk of the PCB contamination in soil is near the surface soil (0 to 1 feet bgs) with three locations where contamination exists at depth.

A number of PAHs, dichlorobenzenes, and phthalates were detected in the 42 SVOC samples collected at the site. Contaminants from one or more of these groups were detected in 37 of the 42 samples collected. However, only six PAHs exceeded the soil objectives at a total of 15 sample locations. The compounds included benzo(a)anthracene, benzo(a)pyrene, chrysene, benzo(b)fluoranthene, benzo(k)fluoranthene, indeno(1,2,3-cd)pyrene, and dibenzo-(a,h)anthracene. Total PAHs were found throughout the site in surface and subsurface soils. Surface soil concentrations were in the range of 0.1 to 15 ppm with one location containing 44 ppm of total PAHs.

The subsurface soil PAH concentrations were in the range of 0.18 to 26 ppm with one location containing 49 ppm of total PAHs. Since the contamination of surface soils at the site with PAHs is not related to the disposal of hazardous waste at the site, no action was considered in the Feasibility Study. The current owners and the City of Buffalo will be advised to take the presence of these contaminants into consideration when making any changes or improvements to the site and to provide future owners with due notice regarding the conditions at the site.

Table 1
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCGs/ Background	SCG/ Bkgd. (ppm)
Soil	Volatile Organic Compounds (VOCs)	1,1-dichloroethane	ND (.01) to 0.31	2 of 24	0.2
	Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	ND (.1) to 11	11 of 42	0.224
		Benzo(a)pyrene	ND (.1) to 9	17 of 42	0.061
		Benzo(b)fluoranthene	ND (.1) to 9	6 of 42	1.100
		Benzo(k)fluoranthene	ND (.1) to 6	3 of 42	1.100
		Chrysene	ND (.1) to 9	10 of 42	0.400
		Dibenzo(a,h)anthracene	ND (.1) to 2	15 of 42	0.014
		Indeno(1,2,3-cd)pyrene	ND (.1) to 4	1 of 42	3.200
	Metals	Arsenic	ND (.01) to 54	8 of 42	7.5
		Beryllium	ND (.01) to 26	19 of 42	1.75
		Chromium	ND (.01) to 121	2 of 42	50
		Copper	ND (.01) to 526	11 of 42	25
		Iron	ND (.01) to 213,000	39 of 42	2000
		Lead	ND (.01) to 1,150	8 of 42	400
		Mercury	ND (.01) to 0.64	7 of 42	0.1
		Nickel	ND (.01) to 62	10 of 42	13
		Selenium	ND(.01) to 526	3 of 42	2
		Zinc	ND (.01) to 1,470	32 of 42	20
	PCBs	Total (Surface)	ND (0.02) to 138	9 of 68	1
		Total (Subsurface)	ND (0.02) to 28	5 of 70	10

Table 1 (continued)
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs/Background	SCG/ Bkgd. (ppb)
Groundwater	Volatile Organic Compounds (VOCs)	Toluene	ND (.01) to 15	1 of 8	5
		Ethylbenzene	ND (.01) to 26	1 of 8	5
		Xylenes	ND (.01) to 120	1 of 8	5
	Semivolatile Organic Compounds (SVOCs)	2-methylphenol	ND (.01) to 2	1 of 8	1
		4-methylphenol	ND (.01) to 3	2 of 8	1
	Metals	Antimony	ND (.001) to 3	1 of 8	3
		Arsenic	ND (.001) to 39	1 of 8	25
		Iron	ND (.001) to 32,700	8 of 8	300
		Magnesium	ND (.001) to 74,800	8 of 8	35,000
		Manganese	ND (.001) to 3,140	3 of 8	300
		Sodium	ND (.001) to 81,000	8 of 8	20,000
	PCBs	Total	ND (0.5)	8 of 8	0.09

Table 1 (continued)
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppb)	FREQUENCY of EXCEEDING SCGs/ Background	SCG/ Bkgd. (ppb)
Surface Water	Volatile Organic Compounds (VOCs)	Acetone	ND (10) to 23	1 of 5	~~50~~ 5
	Semivolatile Organic Compounds (SVOCs)	1,2,4-trichlorobenzene	ND (.01) to 180	1 of 5	5
	Metals	Aluminum	10,400 to 17,200	2 of 5	100
		Cobalt	ND (1) to 5	1 of 5	5
		Iron	19,900 to 87,300	2 of 5	300
		Lead	70.8 to 174	2 of 5	10*
	PCBs	Total	ND (1) to 120	5 of 5	0.000001

* SCG for lead in surface water calculated using an estimated hardness value of 250 ppm

Table 1 (continued)
Nature and Extent of Contamination

MEDIUM	CATEGORY	CONTAMINANT OF CONCERN	CONCENTRATION RANGE (ppm)	FREQUENCY of EXCEEDING SCGs/Background	SCG/ Bkgd. (ppm)
Sediment (Union Ship Canal)	Semivolatile Organic Compounds (SVOCs)	Benzo(a)anthracene	0.12 to 1.8	2 of 13	1.1
		Phenol	ND (0.01) to 0.22	2 of 13	0.03
	Metals	Copper	ND (.001) to 161	2 of 13	110
		Iron	ND (.001) to 83,800	9 of 13	40,000
		Lead	ND (.001) to 883	12 of 13	110
		Manganese	ND (.001) to 1,780	7 of 13	1,100
		Mercury	ND (.001) to 2.1	1 of 13	1.3
		Silver	ND (.001) to 3	1 of 13	2.2
		Zinc	ND (.001) to 1,860	13 of 13	270
	PCBs	Total	0.015 to 10.2	3 of 13	1.8

Thirteen metals were detected in the 42 surface and subsurface soil samples collected from the site, with the majority of the samples being located outside of the TGA. Two compounds were identified at concentrations exceeding the soil objectives (iron and lead). Table 1 summarizes the metal data for the 42 samples.

Groundwater

Six VOC compounds were detected in the eight groundwater samples collected from the site during the RI. Three compounds were identified at concentrations exceeding the groundwater standards. These compounds include toluene, ethylbenzene, and total xylenes at one monitoring well (MW-1). The concentrations were 15 ppb, 26 ppb, and 120 ppb respectively. PCBs were not detected in any of the groundwater samples collected. The groundwater table was encountered at 5 feet to 6 feet bgs. As discussed above, a petroleum product (hydraulic oil) was observed on the groundwater table during test pit activities proximate to MW-3. No hazardous waste was evident. Consequently, the remediation of the petroleum contamination in groundwater will be managed by the NYSDEC's Petroleum Spill Response Program.

Surface Water

Two surface water samples were collected from the Union Ship Canal (UC-1 and UC-2) and samples were collected from three on-site manholes (MH-1, MH-2, and MH-3). It appeared that MH-1 is a dry well and MH-2 and MH-3 were stormwater manholes. Only one VOC was detected in the five samples and it is considered to be a laboratory contaminant. One SVOC, 1,2,4-trichlorobenzene, was detected in MH-1 at 180 ppb (surface water standard is 5 ppb). One PCB Aroclor was also detected in MH-1 at 120 ppb (surface water standard is 0.000001 ppb). The manhole samples were also analyzed for biological oxygen demand (BOD), chemical oxygen demand (COD), and total suspended solids (TSS). The results were non-detectable except for the TSS concentration in MH-3 (17 ppm). Metals were detected in all of the samples collected with two locations exceeding the water quality standards (MH-1 and MH-3). Nine compounds exceeded the water quality standards. These compounds include aluminum, cobalt, copper, iron, lead, mercury, vanadium, and zinc at MH-1 and aluminum, cadmium, copper, iron, lead, mercury, and zinc at MH-3.

Sediment

Twelve metals were detected in the thirteen samples that were collected from the Union Ship Canal. Seven inorganic compounds were identified at concentrations that exceed the sediment criteria. These compounds include copper, iron, lead, manganese, mercury, silver, and zinc. Phenol and benzo(a)anthracene were the only SVOCs that exceeded the sediment criterion. Phenol was detected in two samples with both samples exceeding the sediment criterion. Benzo(a)anthracene was detected in all thirteen samples, however there were only two locations where the concentrations exceeded the sediment criterion. Three VOCs were detected but the concentrations (3 to 26 ppb) suggest that they do not pose a significant risk to ecological receptors. One PCB Aroclor (1260) was detected and the concentration at three sampling locations exceeded the benthic life chronic toxicity criteria of 1.8 ppm. The wildlife bioaccumulation criterion for PCBs of 0.13 ppm was exceeded at seven of the thirteen locations.

The PCB contamination appears to be localized in an area adjacent to the corrugated metal pipe (CMP) that discharges into the canal implying that the PCBs entered the canal through the CMP. The exact piping configuration of MH-2 and MH-3 is currently unknown. After reviewing historical drawings, it appears that a drop inlet located north of the site discharges to MH-2 and that MH-2 and MH-3 are interconnected. Observations in the field during the performance of the RI indicate that MH-3 discharges to the CMP and

ultimately into the canal. Test pit excavation on the perimeter of MH-1 in the TGA indicated that the manhole appears to be isolated and that no connections or piping currently exist. The concentration of metals were evenly distributed along the canal while the concentration of SVOCs increased as the distance from the CMP increased.

The data does not indicate that the contamination in the canal is directly related to historical activities at the site. It is acknowledged that PCB Aroclor 1260 was identified in the site soil and the canal sediment. However, no exposure or contaminant transport pathways were identified during the completion of this study.

The presence of adjoining industrial facilities (Hanna Furnace and Bethlehem Steel), which had documented historical discharges into the canal, suggests that there were multiple sources of contamination which degraded the quality of the canal. However, these sources cannot be distinctively identified at this time. The NYSDEC concludes that the canal is contaminated with PAHs, metals, and PCBs at levels of concern. Improving the conditions in the canal would require addressing each of these contaminant groups. Whereas this project is undertaking the remediation of PCB contamination related to the Shenango Steel site, the NYSDEC is investigating approaches that would address each contaminant group and the source of the contamination. Therefore, active remediation of the canal is not included in this remedy.

4.2: Summary of Human Exposure Pathways

This section describes the types of human exposures that may present added health risks to persons at or around the site. A more detailed discussion of the health risks can be found in Section 3.0 of the RI report.

An exposure pathway is the manner by which an individual may come in contact with a contaminant. The five elements of an exposure pathway are 1) the source of contamination; 2) the environmental media and transport mechanisms; 3) the point of exposure; 4) the route of exposure; and 5) the receptor population. These elements of an exposure pathway may be based on past, present, or future events.

Human health exposure pathways which are known to or may exist at the site include:

- ingestion or dermal contact with PCB contaminated soil;
- ingestion, inhalation or dermal contact with contaminated subsurface soils by maintenance or construction workers.

There are no known exposures to contaminated groundwater. The area is served by public water. If site groundwater were extracted for other purposes, dermal contact or other exposure pathways could become complete.

4.3: Summary of Environmental Exposure Pathways

This section summarizes the types of environmental exposures and ecological risks which may be presented by the site. The Fish and Wildlife Impact Assessment included in the RI presents a more detailed discussion of the potential impacts from the site to fish and wildlife resources.

The Shenango Steel Mold site and the areas surrounding the site are primarily urban with commercial and industrial land use. As discussed above, surface soil at the site is contaminated with PCBs while limited

contamination exists at depth. The plant community is not well developed and does not provide important habitat for terrestrial wildlife due to the disturbed soils and recent history of industrial use at the site. Therefore, there are no significant fish and wildlife concerns at this site. Fish and wildlife concerns related to the Union Ship Canal were not reviewed as part of this study.

SECTION 5: ENFORCEMENT STATUS

Potentially Responsible Parties (PRPs) are those who may be legally liable for contamination at a site. This may include past or present owners and operators, waste generators, and haulers.

The Potentially Responsible Party (PRP) for the site, documented to date, is Sherland, Inc. The site was reportedly owned by Sherland, Inc. during the time period that the illegal scrapping of transformers and on-site disposal of contaminated oil is believed to have occurred.

The PRP declined to implement the RI/FS at the site when requested by the NYSDEC. After the remedy is selected, the PRP will again be contacted to assume responsibility for the remedial program. If an agreement cannot be reached with the PRP, the NYSDEC will evaluate the site for further action under the State Superfund. PRPs are subject to legal actions by the State for recovery of all response costs the State has incurred.

SECTION 6: SUMMARY OF THE REMEDIATION GOALS

Goals for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375-1.10. The overall remedial goal is to meet all standards, criteria and guidance (SCGs) and be protective of human health and the environment. At a minimum, the remedy selected must eliminate or mitigate all significant threats to public health and/or the environment presented by the hazardous waste disposed at the site through the proper application of scientific and engineering principles.

The goals selected for this site are:

- *Prevent to the extent practicable, the potential for direct contact with soil containing PCBs in excess of the soil cleanup goals.*
- *Prevent degradation of groundwater quality resulting from PCBs in soils partitioning into groundwater.*

The Department's Technical and Administrative Guidance Memorandum (TAGM) No. 4046 provides guidance on selecting soil cleanup objectives for PCBs in soil. From that guidance, the numerical Remedial Action Objective for remediation of PCBs in soil at the site are one ppm for surface soil (i.e., from zero to one foot below grade) and 10 ppm for subsurface soil.

Although the remediation of petroleum contaminated soil is not within the scope of this project, the NYSDEC intends to pursue this work through its Petroleum Spill Response Program.

SECTION 7: SUMMARY OF THE EVALUATION OF ALTERNATIVES

The selected remedy must be protective of human health and the environment, be cost effective, comply with other statutory laws and utilize permanent solutions, alternative technologies or resource recovery technologies to the maximum extent practicable. Potential remedial alternatives for the Shenango Steel Mold site were identified, screened and evaluated in the report entitled *Feasibility Study Report; Shenango Steel Mold Site*, dated January 2002.

A summary of the detailed analysis follows. As presented below, the time to implement reflects only the time required to construct the remedy, and does not include the time required to design the remedy, procure contracts for design, or to negotiate with responsible parties for implementation of the remedy.

7.1: Description of Remedial Alternatives

The potential remedies are intended to address the contaminants of concern in soil in the TGA.

Alternative 1. **No Action**

Present Worth: ..... *$ 0*
Capital Cost: ..... *$ 0*
Annual O&M: ..... *$ 0*
Time to Construct ..... *Not Applicable*

The No Action alternative is evaluated as a procedural requirement and as a basis for comparison. It requires continued monitoring only, allowing the site to remain in an unremediated state. This alternative would leave the site in its present condition and would not provide any additional protection to human health or the environment.

Alternative 2. **Soil Cover with Hot Spot Excavation**

Present Worth: ..... *$ 53,000*
Capital Cost: ..... *$ 30,000*
Annual O&M: ..... *$ 3,200*
Time to Construct ..... *2 to 4 months*

The focused soil excavation is the main component of this alternative. This alternative would restrict the TGA to a low occupancy usage as defined in the Toxic Substances Control Act (TSCA) regulations (40 CFR 761.61(a)(8)) through the implementation of a deed restriction. Low occupancy is defined by TSCA as uses where the average time spent in the TGA would be less than 6.7 hours per week on average for any one person. The alternative also includes the focused excavation of soil around sample location SB-P08-A where the surface soil PCB contamination was found to be 138 ppm. Finally, TSCA requires that fence and signage be used in areas where PCB contamination exists in excess of 25 ppm. This alternative recommends maintenance of the existing soil cover near SB-P09-B in lieu of fence and signage as a more protective measure. SB-P09-B exhibited a PCB concentration of 28 ppm at a depth of 4.5 to 5.5 feet bgs.

Construction equipment would be mobilized to the site to perform the soil excavation. Debris and concrete would be removed around SB-P08-A as necessary to perform the soil excavation. Soil would then be excavated in an area that measures approximately 25 feet by 25 feet to a depth of one foot bgs. This

corresponding soil volume is approximately 23 cubic yards (yd^3). The contaminated soil would then be loaded into trucks and transported to a permitted off-site disposal facility. Post-excavation samples would be collected from each of the sidewalls and the floor. All samples would be analyzed for PCBs and additional excavation would be performed if the results indicated total PCB concentrations exceeding 25 ppm.

Upon completion of the excavation and the receipt of post-excavation sample results which are less than 25 ppm of total PCBs, the excavated area would be backfilled with fill material that complies with TAGM 4046 and compacted. The cover would consist of four inches of clean fill and six inches of topsoil. The cover would be compacted to direct stormwater from the soil cover. All backfilled areas would be seeded to re-establish vegetation.

The existing soil cover near SB-P08-A would be inspected on an annual basis to monitor the effects of erosion and to ensure the integrity of the cover is maintained. If the soil cover begins to degrade, additional topsoil would be brought to the site placed and compacted in all areas where needed.

Alternative 3. **Soil Cover and Partial Excavation**

Present Worth: ..... *$ 258,000*
Capital Cost: ..... *$ 225,000*
Annual O&M: ..... *$ 4,000*
Time to Construct ..... *2 to 4 months*

The limited excavation and the placement of a soil cover are components of this alternative. The construction activities described in Alternative 2 would also be conducted in Alternative 3. Soil would be excavated in the TGA which contained PCBs in excess of 10 ppm as specified in TAGM 4046. It is expected that a total of 745 yd^3 would be excavated and approximately 23 yd^3 would be considered a hazardous waste. The soil near SB-08-A would be considered hazardous waste. The soil would be sampled for PCBs and then segregated based on the waste classification. The soil deemed to be hazardous waste would be transported and disposed at an off-site disposal facility that is permitted to accept PCBs and hazardous waste. The remaining material would be transported and disposed at a permitted off-site disposal facility.

Construction equipment would be mobilized to the site to perform the soil excavation. Debris and concrete would be removed around SB-08-A as necessary to perform the soil excavation. Post-excavation samples would be collected from each of the sidewalls and the floor. All samples would be analyzed for PCBs and additional excavation would be performed if the results indicated total PCB concentrations exceeding 10 ppm.

Excavation in the areas near SB-08-A, SB-09-A, and SB-11-A would continue at depth (2 feet, 8 feet, and 3 feet respectively) due to PCB contamination. It is expected that dewatering would be required during the excavation based on the historical depth to groundwater in the area (5 to 6 feet bgs). The groundwater would be pumped into a portable storage tank. The groundwater would be sampled and transported to a permitted off-site disposal facility. It is anticipated that the groundwater would be classified as a non-hazardous waste.

Upon completion of the excavation and the receipt of post-excavation sample results which are less than 10 ppm of total PCBs, the excavated area would be backfilled with fill material that complies with TAGM 4046 and compacted. All backfilled areas would be seeded to re-establish vegetation.

Finally, a 10-inch soil cover would be placed over soil that contains total PCBs at concentrations greater than 1 ppm and less than 10 ppm. This has been estimated to encompass an area of 5,600 ft^2. The cover would consist of four inches of clean fill and six inches of topsoil. The design and construction of the cover would comply with the permeability sieve, liquid limit, and plasticity index in TSCA (40 CFR 761.75 (b)(1)(ii) through (b)(1)(v)). The cover would be compacted to direct stormwater from the soil cover and seeded to re-establish vegetation. The soil cover would be inspected on an annual basis to monitor the effects of erosion and to ensure the integrity of the cover is maintained. If the soil cover begins to degrade, additional topsoil would be brought to the site placed and compacted in all areas where needed.

Alternative 4. **Full Soil Excavation**

Present Worth: ..... *$ 270,000*
Capital Cost: ..... *$ 270,000*
Annual O&M: ..... *$ 0*
Time to Construct: ..... *2 to 4 months*

This alternative includes the excavation of all soil that exceeds the TAGM 4046 levels for total PCBs in the TGA. This would include the 5,600 ft^2 area proposed for capping in Alternative 3. This encompasses a total area of 19,444 ft^2 as shown on Figure 3. This would result in the excavation and disposal of approximately 951 yd^3 of soil. It is expected that a total of 928 yd^3 would be excavated and approximately 23 yd^3 would be considered a hazardous waste. Based upon the existing data for this site, the excavation plan proposed for this alternative would allow the removal of all PCB contaminated soil (both surface and subsurface) in the TGA above one ppm. This alternative would not include any soil cover and therefore no future activities would be required.

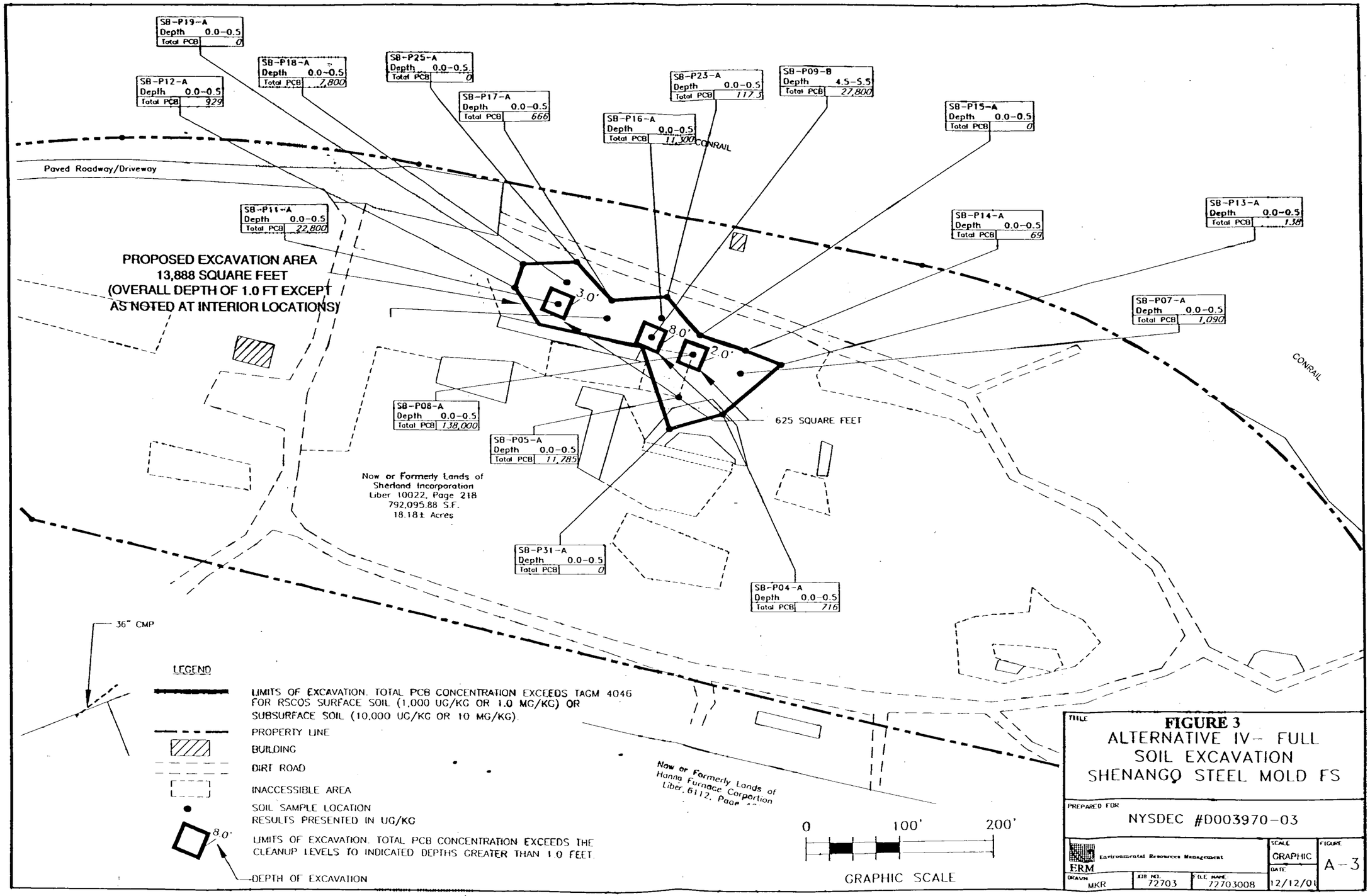
Construction equipment would be mobilized to the site to perform the soil excavation. Debris and concrete would be removed around SB-08-A as necessary to perform the soil excavation. Post-excavation samples would be collected from each of the sidewalls and the floor. All samples would be analyzed for PCBs and additional excavation would be performed if the subsurface results indicated total PCB concentrations exceeding one ppm.

Excavation in the areas near SB-08-A, SB-09-A, and SB-11-A would continue at depth (2 feet, 8 feet, and 3 feet respectively) due to PCB contamination. It is expected that dewatering would be required during the excavation based on the historical depth to groundwater in the area (5 to 6 feet bgs). The groundwater would be pumped into a portable storage tank. The groundwater would be sampled and transported to a permitted off-site disposal facility. It is anticipated that the groundwater would be classified as a non-hazardous waste.

Upon completion of the excavation and the receipt of post-excavation sample results which are less than one ppm of total PCBs, the excavated area would be backfilled with fill material that complies with TAGM 4046 and compacted. All backfilled areas would be seeded to re-establish vegetation.

7.2 Evaluation of Remedial Alternatives

The criteria used to compare the potential remedial alternatives are defined in the regulation that directs the remediation of inactive hazardous waste sites in New York State (6 NYCRR Part 375). For each of the criteria, a brief description is provided, followed by an evaluation of the alternatives against that criterion. A detailed discussion of the evaluation criteria and comparative analysis is included in the Feasibility Study.



TITLE

FIGURE 3
ALTERNATIVE IV- FULL SOIL EXCAVATION
SHENANGO STEEL MOLD FS

PREPARED FOR
NYSDEC #D003970-03

ERM Environmental Resources Management

DRAWN	JOB NO.	FILE NAME	SCALE	FIGURE
MKR	72703	72703008	GRAPHIC	A-3
			DATE 12/12/01	

The first two evaluation criteria are termed threshold criteria and must be satisfied in order for an alternative to be considered for selection.

1. Compliance with New York State Standards, Criteria, and Guidance (SCGs). Compliance with SCGs addresses whether or not a remedy will meet applicable environmental laws, regulations, standards, and guidance.

Chemical specific and Action-Specific SCGs are identified in Appendix C of the FS. The main SCGs identified for this study are: NYSDEC TAGM 4046: "Technical and Administrative Guidance Memorandum: Determination of Soil Cleanup Objectives and Levels," U.S. EPA Toxic Substances Control Act (TSCA) Regulations 40 CFR Part 761, and NYSDEC Class GA Groundwater standards as promulgated in 6 NYCRR 703, dated June 1998.

Alternatives No. 3 and 4 would meet the levels listed in TAGM 4046. Alternative No. 2 would meet the TSCA low occupancy cleanup level for PCBs but would not comply with TAGM 4046.

These actions described above would not reduce the concentration of VOCs, SVOCs, and metals in groundwater to below Class GA standards. However, these constituents are not associated with the disposal of hazardous waste at the site (i.e., PCBs). Also, the groundwater use restrictions would be effective in ensuring that future owners and site workers would not be exposed to impacted groundwater.

Each alternative evaluated would comply with action-specific SCGs. Approvals necessary for implementing these alternatives would be obtained before initiating the remedial action. No location-specific SCGs were identified.

2. Protection of Human Health and the Environment. This criterion is an overall evaluation of each alternative's ability to protect public health and the environment.

All alternatives (excluding No Action) ensure that no unacceptable risks are posed to receptors by site soil. However, varying levels of acceptable risk remain for some of the alternatives.

Alternative No. 2 would provide adequate protection of human health and the environment under low occupancy use scenarios. Trespasser exposure may still be of concern since surface soil remains on the site which exceeds the TAGM 4046 levels for PCBs. This exposure exists due to the fact that access to the site by the public is currently unrestricted.

Alternatives No. 3 and 4 would be the most protective of human health and the environment because all soil containing PCBs in excess of the SCGs would be removed from the site or covered to comply with subsurface SCGs.

The next five "primary balancing criteria" are used to compare the positive and negative aspects of each of the remedial strategies.

3. Short-term Effectiveness. The potential short-term adverse impacts of the remedial action upon the community, the workers, and the environment during the construction and/or implementation are evaluated. The length of time needed to achieve the remedial objectives is also estimated and compared against the other alternatives.

Implementing Alternatives No. 2, 3, and 4 would all present similar risk to the community, workers, and the environment. This would include the potential for a temporary increase in risk to the community and workers from particulate emissions (dust) containing PCBs during soil excavation. This risk would be controlled by the use of dust control measures such as water or foam sprays and a particulate air monitoring program.

Additionally, short-term risks would be posed from the transportation of excavated soil from the site to a permitted disposal facility. Alternatives No. 3 and 4 would pose greater risk as the excavation for these remedies is expected to continue for at least 10 days. Alternative No. 2 would pose a smaller risk as only five days of excavation related activities are expected for this remedy.

Alternatives No. 3 and 4 would also pose risk to the community during the transportation of potentially impacted groundwater to a permitted off-site disposal facility. Releases of spilled material would be potential concerns to the public and may impact the environment.

The time to achieve remedial goals would be similar (about 2 to 4 months) for Alternatives No. 2, 3, and 4.

4. Long-term Effectiveness and Permanence. This criterion evaluates the long-term effectiveness of the remedial alternatives after implementation. If wastes or treated residuals remain on site after the selected remedy has been implemented, the following items are evaluated: 1) the magnitude of the remaining risks, 2) the adequacy of the controls intended to limit the risk, and 3) the reliability of these controls.

Alternative No. 1 would rely upon natural attenuation as the only mechanism for achieving the remedial goals. Since this would not occur in a reasonable amount of time, and exposure to the contaminated soil would continue, it is not considered effective.

Alternative No. 2 would effectively protect human health under low occupancy use where the site may not be occupied for more than 6.7 hours per week. This alternative would also allow approximately 928 yd^3 of soil to remain on the site which contains PCBs in excess of the SCGs. Therefore, Alternative No. 2 would only have long-term permanence and effectiveness if the site maintains a low occupancy use.

Alternative No. 3 would effectively prevent direct contact with the soil containing PCBs above the SCGs in high occupancy uses. As discussed above, this would be accomplished by excavating approximately 745 yd^3 of soil which contains PCBs in excess of the SCGs and placing a soil cover over approximately 206 yd^3 of soil. Since the cover would be in place, the subsurface soil objective of 10 ppm applies. Therefore, no soil above the SCGs would remain at the site.

Alternative No. 4 would permanently remove all soil containing PCBs in excess of the SCGs from the site. Based upon the existing data for this site, the excavation plan proposed for Alternative 4 would allow the removal of all PCB contaminated soil (both surface and subsurface) in the TGA above one ppm. Therefore, no soil would remain that poses risks to human health and the environment from exposure to PCBs.

5. Reduction of Toxicity, Mobility or Volume. Preference is given to alternatives that permanently and significantly reduce the toxicity, mobility or volume of the wastes at the site.

Alternative No. 1 would not reduce the toxicity, mobility, or volume of the on-site contaminants, except as occurs through natural attenuation.

Alternatives No. 2, 3, and 4 would have no effect on the toxicity of the contaminants as the soil would not be treated or processed before direct landfill at an off-site location. The three alternatives would reduce the volume and mobility of PCB at the site by removing contaminated soils. Alternative 4 would provide the greatest reductions. Alternative 3 would be comparable to Alternative 4 and both would provide significantly greater reductions than Alternative 2.

6. Implementability. The technical and administrative feasibility of implementing each alternative are evaluated. Technical feasibility includes the difficulties associated with the construction and the ability to monitor the effectiveness of the remedy. For administrative feasibility, the availability of the necessary personnel and materials is evaluated along with potential difficulties in obtaining specific operating approvals, access for construction, etc.

Alternatives No. 1, 2, 3, and 4 are technically implementable with available methods, equipment, materials, and services. Alternatives No. 2, 3, and 4 would require the use of standard construction equipment and methods for the excavation of soil, the installation of soil covers, and the dewatering of excavation areas.

Alternatives 1, **2,** 3, and 4 are administratively implementable with the assumption that adequate funding is available. Alternative No. 2 is not likely to be implementable as it is unlikely that the site or the TGA in particular would be restricted to a low occupancy usage scenario (e.g., light industrial and commercial uses) based upon informal indications from the City of Buffalo regarding potential redevelopment plans for the area.

7. Cost. Capital and operation and maintenance costs are estimated for each alternative and compared on a present worth basis. Although cost is the last balancing criterion evaluated, where two or more alternatives have met the requirements of the remaining criteria, cost effectiveness can be used as the basis for the final decision.

The costs for each alternative are presented in Table 2. The NYSDEC concludes that the incremental cost of Alternative 4 over Alternative 3 is justified given the result of increased protectiveness and minimizing site use restrictions.

This final criterion is considered a modifying criterion and is taken into account after evaluating those above. It is evaluated after public comments on the Proposed Remedial Action Plan have been received.

8. Community Acceptance - Concerns of the community regarding the RI/FS reports and the Proposed Remedial Action Plan have been evaluated. The "Responsiveness Summary" included as Appendix A presents the public comments received and the Department's response to the concerns raised. In general the public comments received were supportive of the selected remedy.

SECTION 8: SUMMARY OF THE SELECTED REMEDY

Based upon the results of the RI/FS, and the evaluation presented in Section 7, the NYSDEC is selecting Alternative 4 as the remedy for this site.

This selection is based on the evaluation of the four alternatives developed for the site. The TGA is contaminated with PCBs in the surface soil, and to a lesser extent, the subsurface soil. The remedy would

Table 2
Remedial Alternative Costs

Remedial Alternative	Capital Cost	Annual OM&M	Total Present Worth
1. No Action	$0	$0	$0
2. Soil Cover with Hot Spot Excavation	$30,000	$3,200	$53,000
3. Soil Cover and Partial Excavation	$225,000	$4,000	$258,000
4. Full Soil Excavation	$270,000	$0	$270,000

address the remediation of the surface and subsurface soils in the TGA by removing all PCB contaminated soils above the RAOs.

To be considered effective, the selected remedy for the site must accomplish the following general goals: 1) it must prevent significant public exposure to contaminants from contact with either surface or subsurface soil in the TGA; and 2) it must prevent, to the extent practicable, degradation of groundwater quality resulting from PCBs in soils partitioning into groundwater. The NYSDEC also intends to address the petroleum contamination and advise the property owner of SVOC contamination found at the site that is not associated with the disposal of hazardous waste.

There is potential for exposure to surface and subsurface soil in the TGA by the public due to unrestricted access to the site. Alternative No. 1 (No Action) would not reduce contaminant levels in a reasonable amount of time. Therefore, the "No Action" alternative was not selected.

Alternative No. 2 would ensure that no unacceptable exposures are posed to receptors by site soil but the TGA would be restricted to a low occupancy use. This does not appear to be implementable due to the possible inclusion of the site in the redevelopment of the area.

Alternative No. 3 would provide for unrestricted use of the site, however if implemented, it would require annual inspection and reporting of the soil cover "in perpetuity" as required by TSCA in 40 CFR Part 761.61 (a)(7). Also it is estimated that topsoil must be brought to the site to maintain the integrity of the soil cover at five year intervals. There would also be a need to inspect, report, and maintain the integrity of the soil cover indefinitely. Alternative No. 4 would not require any additional activities after the excavation and off-site disposal of the soil contaminated with PCBs. The overall cost difference between Alternatives No. 3 and 4 is incremental (approximately $12,000) and justified. Therefore, Alternative No. 4 presents the best approach to the remediation of the soil contamination in the TGA.

The use of groundwater for drinking water or other purposes in the area of the site is controlled by local municipal prohibitions. This control will help to prevent unintentional exposures to contaminated groundwater from the site.

The estimated present worth cost to implement and construct the remedy is $270,000. There are no annual operation and maintenance costs as all PCB contaminated soil above SCGs would be removed.

The elements of the selected remedy are as follows:

1. A remedial design program to verify the components of the conceptual design and provide the details necessary for the construction, operation and maintenance, and monitoring of the remedial program. Any uncertainties identified during the RI/FS would be resolved.

2. Removal of concrete and debris in the area surrounding the TGA. Removal of the concrete foundation that is located on the southern border of the TGA. All soil that contains PCBs in excess of the TAGM 4046 guidance levels (1 ppm for surface soil and 10 ppm for subsurface soil) would be excavated (approximately 951 yd^3) with subsequent sampling and segregation to separate the hazardous and non-hazardous material. Based upon the existing data for this site, the excavation plan selected for this alternative would allow the removal of all PCB contaminated soil (both surface and subsurface) in the TGA above one ppm. All soil would be transported to a permitted off-site disposal facility.

3. All excavated areas would be backfilled with material that complies with TAGM 4046, compacted, and seeded to re-establish vegetation.

The NYSDEC also intends on addressing petroleum contamination and associated groundwater monitoring through its Petroleum Spill Response Program. The property owner and the City of Buffalo will also be informed of other contamination found at the site that is not related to the disposal of hazardous waste so that this information can be taken into account during any subsequent use of the site. The NYSDEC Spills Program maintains a database that would allow potential future buyers of this property to learn of the existence of the subsurface petroleum contamination.

SECTION 9: HIGHLIGHTS OF COMMUNITY PARTICIPATION

A repository for documents pertaining to the site was established at the following locations:

- Dudley Branch Library
  2010 South Park Avenue
  Buffalo, New York 14220

- NYSDEC Region 9 Office
  270 Michigan Avenue
  Buffalo, New York 14203

- NYSDEC Central Office
  625 Broadway
  Albany, New York 12233-7017

As part of the remedial investigation process, a number of Citizen Participation activities were undertaken in an effort to inform and educate the public about conditions at the site and the potential remedial alternatives. The following public participation activities were conducted for the site:

- A site mailing list was established which included nearby property owners, local political officials, local media and other interested parties.

- Fact Sheet - February 2002; Announced the Proposed Remedial Action Plan.

- Public Meeting - March 12, 2002; Results of the RI/FS presented, possible remedial actions discussed, and presentation of the Proposed Remedial Action Plan.

APPENDIX A

RESPONSIVENESS SUMMARY

Appendix A
Responsiveness Summary
Shenango Steel Mold
Proposed Remedial Action Plan
City of Buffalo, Erie County
Site No. 9-15-172

The Proposed Remedial Action Work Plan (PRAP) for the Shenango Steel Mold site, was prepared by the New York State Department of Environmental Conservation (NYSDEC) and issued to the local document repository on February 21, 2002. This Plan outlined the preferred remedial measure proposed for the remediation of the contaminated soil at the Shenango Steel Mold site (Site). The preferred remedy is described in the main body of the Record of Decision.

The release of the PRAP was announced via a notice to the mailing list, informing the public of the PRAP's availability.

A public meeting was held on March 12, 2002 which included a presentation of the Remedial Investigation (RI) and the Feasibility Study (FS) as well as a discussion of the proposed remedy. The meeting provided an opportunity for citizens to discuss their concerns, ask questions and comment on the proposed remedy. These comments have become part of the Administrative Record for the Site. Written comments were received from the City of Buffalo. The public comment period for the PRAP ended on March 25, 2002.

This Responsiveness Summary responds to all questions and comments raised at the March 12, 2002 public meeting and to the written comments received.

The following are the comments received at the public meeting, with the NYSDEC's responses, organized by topic:

Part A: Comments Concerning the PRAP:

Comment A-1: Is the PRAP the most extensive plan? How would it be affected if the property was developed for residential use?

Response A-1: The PRAP has selected the full excavation of soil contaminated with PCBs and the off-site disposal of this material. It is expected that the concentration of PCBs in the "Tight Grid Area" (TGA) soil will be 1 ppm or less. Regarding PCB contamination, this would be appropriate for unrestricted residential use of the Site. However, the property owner and the City of Buffalo will also be informed of other contamination found at the site that is not related to the disposal of hazardous waste so that this information can be taken into account during any subsequent use of the site. Also, the property is currently zoned for commercial/industrial use and residential use was not considered in the PRAP.

Comment A-2: How far down did you go to test the groundwater?

Response A-2: Groundwater at the Site was generally encountered at 4 to 6 feet below grade surface (bgs). Groundwater monitoring wells were typically installed to a final depth of 17 feet bgs and constructed with 15 feet of screen (2 to 17 feet bgs).

Comment A-3: Were there any catch basins collecting groundwater?

Response A-3: There were three manholes discovered at the Site during the Remedial Investigation field work and they have been designated as MH-1, MH-2, and MH-3. Historical drawings indicate that a catch basin located north of the Site in the railroad area is the source of the stormwater and groundwater in MH-2 and MH-3. MH-1 is located in the TGA and the manhole appears to be isolated.

Comment A-4: Where will the contaminated soil go off-site?

Response A-4: The soil will be disposed at an authorized off-site disposal facility which accepts either hazardous or non-hazardous wastes as defined by State and Federal regulations. More than one disposal facility may be used.

Comment A-5: Do you know which landfill it would go to?

Response A-5: As noted above, the soil will be removed to a permitted off-site disposal facility. The exact facility and location is unknown at this time as a contractor has not been selected to perform the work. The contractor selected for the remediation of the Site will propose a permitted facility and this information will be reviewed by the NYSDEC.

Comment A-6: As you complete the excavation, will the excavated soil be tested?

Response A-6: Yes, the soil will be sampled for disposal purposes at a frequency specified by the disposal facility. The soil which remains at the TGA will be sampled and analyzed to confirm that PCBs are present in concentrations that are less than 1 ppm.

Comment A-7: The only hazardous waste identified is PCBs? What about the hazardous substances?

Response A-7: Soil and groundwater from the Site were collected and analyzed for the presence of volatile organic compounds, semivolatile organic compounds (SVOCs), metals, pesticides, and PCBs. Other than PCBs, there was no other hazardous waste found at the Site. Petroleum impacted soils were discovered near MW-3, however the Superfund program does not address petroleum contamination. This issue will be managed by the NYSDEC's Petroleum Spill Response Program. SVOCs were found throughout the Site but their presence is not considered to be the result of the disposal of hazardous waste.

Comment A-8: Will there be oversight by NYSDEC during the removal of PCB contaminated soil to ensure that exposure to contamination will not occur?

Response A-8: The NYSDEC will select a contractor to perform the remediation specified in the PRAP. This contractor will be required to prepare and comply with a community health and safety plan to ensure the protection of the public. The NYSDEC will perform oversight of the construction activities and communicate with the public, as appropriate.

Part B: Comments Concerning Current Site Conditions:

Comment B-1: Are there trees in this area?

Response B-1: Yes there are trees on the Site premises, however there are none in the TGA where the proposed excavation activities are planned.

Comment B-2: What will be done to protect the animals there?

Response B-2: There is little wildlife activity in the TGA due to the lack of vegetation and the presence of trash and construction debris. It is not expected that the excavation activities will impact any other area of the Site that may contain flora or fauna.

Comment B-3: In regards to the former buildings, do any floors remain?

Response B-3: Yes the Site does contain the remains of building floors and certain sections which have not been disturbed. They are generally found in the northern portion of the Site and near the TGA. It is expected that portions of the floor and other construction debris will be removed during the excavation of the PCB contaminated soil.

Comment B-4: Is the soil beneath the floor contaminated?

Response B-4: Generally, the areas below the floors were found to be inaccessible and not available for investigation. These areas will be investigated as part of the design phase of the project to determine the condition of the soil. Any contaminated soil observed during these activities will be combined with the soil being disposed at the permitted off-site disposal facility.

Part C: Comments Concerning Redevelopment of the Site

Comment C-1: If the Site is used for housing, would the remediation you propose be suitable?

Response C-1: As described in response A-1, the remedial action of removing soil contaminated with PCBs is considered the most appropriate action for the protection of human health and the environment. It is not likely that other remediation would be necessary, however other restrictions and considerations might be required if the Site were to be used for residences (see also response A-1).

Comment C-2: Why are residential and commercial cleanup levels different? You are there about the same amount of time.

Response C-2: Many factors are considered when developing cleanup levels and they include the contaminants and their concentrations, the release and transport mechanisms, the point of exposure, and the receptor population. Commercial projects typically include office and retail buildings and activities that are generally conducted indoors. The exposure pathway for the public is mostly blocked by the presence of asphalt parking lots, concrete building foundations, and roadways. Residential cleanup levels are more restrictive due to the nature of many activities such as gardening and playing outdoors. It is true that some people spend significant amounts of time working in commercial settings, however the potential for exposure to soils is generally smaller.

Comment C-3: Will people using the green space come in contact with the contamination?

Response C-3: The PRAP specifies the removal of all soil in the TGA which contains PCBs in excess of 1 ppm. The area will then be backfilled with clean material, compacted, and seeded to reestablish a

vegetative cover. Therefore, the public should not be exposed to any of the PCB contamination in the TGA.

Comment C-4: Will future developers have to pay part of the cost for remediation?

Response C-4: Once remediation is complete, future owners would not be required to pay for the costs of remediation. The Department will continue to pursue cost recovery from responsible parties.

Comment C-5: Will the property (after cleanup) then be ready for development?

Response C-5: The property will be ready for development after the remedy is implemented and the petroleum contaminated soil is removed from the area near MW-3. As noted previously, the Site is zoned for Commercial/Industrial activity and any development would need to be consistent with such zoning. The future use of the property is unknown at this time but may be included in the South Buffalo Redevelopment Plan for the Union Ship Canal.

Comment C-6: Does the State maintain some sort of liability about the Site?

Response C-6: No, New York State does not assume any liability for the Site at any time during the Superfund program.

Part D: Written Comments

A letter dated March 19, 2002 was received from Mr. Dennis Sutton, City of Buffalo, and included comments concerning contamination in the Union Ship Canal and the Site.

Comment D-1: The contamination detected on the Shenango Steel Mold property, particularly the PCB Aroclor 1260 appears to be very similar to the sediment contamination detected around the outfalls of the storm sewers that run through the site and discharge into the adjacent Union Ship Canal. Is the NYSDEC preparing to more fully investigate the potential for the Shenango Steel Mold property to be the source of the offsite contamination in the Union Ship Canal sediments? This would include extensive investigation of the Shenango sewer system, including but not limited to smoke testing of the sewers, and analysis of the sediment and bedding and runoff pathways and other potential migratory routes. If the sediment running away from the manholes is sufficiently contaminated to justify action to protect the environment, we do submit the potential for offsite contamination from Shenango, or its neighbor be investigated and addressed.

Response D-1: Test pit activities performed in the Summer 2001 revealed that the manhole located in the TGA (MH-1) was isolated and that no connections or piping could be observed. Therefore, smoke testing of this structure is not warranted. This also indicates that no direct link to the stormwater system and the manholes (MH-2 and MH-3) could be identified. No sediment was present in MH-2 or MH-3 during the inspection that was performed as part of the Remedial Investigation. Also, Aroclor 1260 was the most widely manufactured and used PCB in the United States. Its presence in the canal could have been the result of illegal disposal activities as access to the site is unrestricted or due to discharges from nearby industrial facilities.

During the design of the remedy, the Department will complete additional site investigation work to provide the information needed for the detailed plans and specifications. As part of this investigation,

the Department will acquire additional site data to further investigate the origin of the PCBs found in the sediment of the canal.

Comment D-2: The report stated that numerous buildings were once located on-site, but have since been demolished. Was an asbestos survey and removal conducted prior to the demolition? The report also states that the property contains large amounts of surface debris (metal, rubble, trash) and subsurface rubble. If these materials have not been analyzed for asbestos containing materials, we request that the NYSDEC assess the potential that asbestos containing materials may have been released to the site and adjacent properties during building demolition and other on-site activities.

Response D-2: No historical records or drawings were available for review during the preparation of the RI/FS that indicate if asbestos may be present at the site. Therefore, it is unknown if an asbestos survey and removal was conducted prior to the demolition of the buildings at the Site. The NYSDEC will perform an asbestos survey at the Site and perform soil sampling and analysis for asbestos as part of the engineering design portion of the project.

APPENDIX B

Administrative Record

Administrative Record File Index
Shenango Steel Mold
Site No. 9-15-172
City of Buffalo, Erie County
ROD Signed: March 2002

1. Emergency Removal Action (PCB Transformer Oil Spill); NYSDEC, November 1994.

2. Preliminary Site Assessment Report - Volume 1; ABB Environmental Services, November 1995.

3. Preliminary Site Assessment Report - Volume 2 (Supporting Documentation); ABB Environmental Services, November 1995.

4. Preliminary Site Assessment Report - Hazard Ranking System; ABB Environmental Services, November 1995.

5. Registry Site Classification Decision - Shenango Steel Mold Site No. 9-15-172; NYSDEC, November 1998.

6. Final Report for Sediment Sampling and Chemical Analysis at the Union Ship Canal in Buffalo, New York (Volume I - Technical Report); PADIA Environmental Inc., January 2000.

7. Work Plan for the Remedial Investigation/Feasibility (Shenango Steel Mold); Environmental Resources Management, August 2000.

8. Surficial Soil Sampling Report (Areas Northeast and Southeast of the Union Ship Canal); Barron & Associates, October 2001.

9. Report on Activities (Emergency Drum Removal Action No. 9097); NYSDEC, December 2001.

10. Referral Memorandum (No. 9-15-172) from Mr. D. Desnoyers, NYSDEC to Michael O'Toole, NYSDEC, dated August 10, 1999.

11. RI/FS Work Assignment Letter (No. D003970-03) from Mr. R. Lupe, NYSDEC to Gregory Shkuda, Environmental Resources Management, dated January 18, 2000.

12. Remedial Investigation; Environmental Resources Management, January 2002.

13. Appendices for Remedial Investigation Report; Environmental Resources Management, January 2002

14. Feasibility Study; Environmental Resources Management, January 2002

15. Proposed Remedial Action Plan - Shenango Steel Mold; NYSDEC, February 2002.

16. Record of Decision, Shenango Steel Mold Site, No. 9-15-172, NYSDEC, March 2002.

17. Letter from Mr. D. Sutton, City of Buffalo to James E. Malcolm, Project Manager, Re: Proposed Remedial Action Plan for the Shenango Steel Mold Site, dated March 19, 2002.